EXHIBIT SS

Page 1

1   IN THE UNITED STATES DISTRICT COURT
              FOR THE SOUTHERN DISTRICT OF NEW YORK
2

     _____
3   MICROSOFT CORPORATION,   )
)
4   Plaintiff,   )
) CIVIL ACTION NUMBER
5   VS.   ) 1:11-CV-02365-KBF
)
6   DATATERN, INC.,   )
)
7   Defendant.   )
     _____)
8   SAP AG and SAP AMERICA, INC.,)
)
9   Plaintiffs,   )
) CIVIL ACTION NUMBER
10   VS.   ) 1:11-CV-02648-KBF
)
11   DATATERN, INC.,   )
)
12   Defendant.   )
     _____)
13
14

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15

                 ORAL/VIDEO DEPOSITION OF
16

                      NEERAJ GUPTA
17

                     JUNE 18, 2012
18

        ****
19
20   ORAL DEPOSITION OF NEERAJ GUPTA, produced as a
     witness at the instance of the Plaintiffs, was duly
21   sworn, was taken in the above-styled and numbered cause
     on the JUNE 18, 2012, from 9:16 a.m. to 6:17 p.m.,
22   before Chris Carpenter, CSR, in and for the State of
     Texas, reported by machine shorthand, at the offices of
23   McKool Smith, 300 W. 6th Street, Suite 1700, Austin,
     Texas 78701, pursuant to the Federal Rules of Civil
24   Procedure and the provisions stated on the record or
     attached hereto.
25   Job No. CS401625

1   A.   I don't believe Codd's 12 rules distinguished

2   between a normal table and a denormalized table. They

3   do say that these 12 rules for what it means to be a

4   relation, and therefore even have a relational database.

5   Q.   So if a null value is allowed in the table per

6   Rule 3, does that render the table normal or denormal or

7   it doesn't affect?

8   MS. FREEMAN: Objection, vague, ambiguous.

9   A.   It really all depends on the scope you're

10   talking about. If you apply Codd's later thinking on

11   ternary logic, you could conceivably still have a

12   normalized table. In his earlier definition and work,

13   and as carried forward by Day and others, that would be

14   a -- you could not have a normal table if it, in fact,

15   had a null in one of the fields.

16   Q.   (By Mr. Goettle) So a table -- some -- some --

17   some skilled artisans might consider a table that has a

18   null value as a denormal table or a nonnormal table?

19   MS. FREEMAN: Objection, compound, vague.

20   A.   Yes. I think if you look at the scope of art,

21   that's correct.

22   Q.   (By Mr. Goettle) So -- and then other skill

23   artisans might consider a table with null values to

24   still, if it meets the other three criteria, would still

25   be in normal form?

1   A.   Yes.   I think that there are people that would

2   look at it that way, yes.

3   Q.   And this is true as of the time of the filing

4   of the patent application for the '402 patent, this --

5   this difference in how skilled artisans viewed normal

6   form?

7   MS. FREEMAN: Objection, vague, ambiguous,

8   compound.

9   A.   Yes.   That is true as of the filing of the --

10   the '402.   I would suggest, however, that most people

11   apply the original Codd thinking that a null value in a

12   field would render that table not able to be in normal

13   form or not in normal form.   It's much more of a debate

14   for academics on the ternary logic thinking.

15   Q.   I just want to make sure the record is clear on

16   this.   So it's your testimony that most people apply the

17   original Codd thinking that a null value in a field

18   would render that table nonnormal?

19   A.   Yes, to not be in normal form.

20   Q.   Okay.   What -- what is normalizing within the

21   context of the '402 patent?

22   A.   Can you point me to something specific?   The

23   word is used in the '402 patent, if I recall properly,

24   in discussing the background and in prior art

25   approaches, as well as some of the processes described

1   in the specification. So I really want to answer your

2   question, but in a correct context.

3   (Exhibit 5 marked for identification.)

4   Q.   Okay. Sure. Why don't we do this. I marked

5   Exhibit 5 -- or the court reporter marked Exhibit 5.

6   A.   (Witness reviewing document.)

7   Q.   Can you tell me what Exhibit 5 is?

8   A.   Exhibit 5 looks like the '402 patent with a

9   reexam certificate attached.

10   Q.   So if you look at the Column 1 at the

11   Background of the Invention section, at about line 30,

12   there's a discussion of normalization there.

13   MS. FREEMAN: Is there a question pending?

14   Q.   (By Mr. Goettle) Have you had a chance to look

15   at that?

16   A.   Yeah, I'm with you.

17   Q.   Okay. So what is normalization in the context

18   of the '402 patent?

19   MS. FREEMAN: Are you referring to the

20   '402 generally, or just the part that you just pointed

21   him to?

22   A.   Well, this -- this part of the '402 patent at

23   Line 30 is talking about database normalization. Where

24   it says that normalization is a database technique

25   that's used or typically used to separate data into more

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 1              MS. FREEMAN:  I'm not agreeing to any
 2   special rules --
 3              MR. GOETTLE:  You can't just --
 4              MS. FREEMAN:  -- on taking a break.  No.
 5              MR. GOETTLE:  Okay.
 6              MS. FREEMAN:  I'm not.
 7              MR. GOETTLE:  All right.  Let's take a
 8   break.
 9              THE VIDEOGRAPHER:  This marks the end of
10   videotape number 2.  We're going to off the record.  The
11   time is 11:25.
12              (Recess.)
13              THE VIDEOGRAPHER:  This marks the
14   beginning of videotape Number 3, in the deposition of
15   Neeraj Gupta on June 18, 2012.  We're going back on the
16   record the time is 11:37.
17              (Exhibit 6 marked for identification.)
18       Q.   (By Mr. Goettle) I'm going to hand you what the
19   court reporter just marked as Exhibit 6.
20       A.   Okay.
21       Q.   This is obviously a hypothetical table and my
22   question for you, sir, is:  After you've had a chance to
23   look at the table, can you tell me whether this table is
24   in first normal form?
25       A.   There's not enough information here for me to
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1   answer that question.

2   Q.   What other information do you need to know?

3   A.   It would be important to know, minimally,

4   whether the order of these columns is relevant.

5   Q.   Okay.

6   A.   It would be important to know whether the order

7   of the rows is relevant.

8   Q.   Anything else?

9   A.   No. That's -- that's what comes to mind.

10   Q.   Okay. Let's assume that the ordering of the

11 columns and the ordering of the rows is immaterial. Do

12 you understand the caveat?

13   A.   Yes, I do.

14   Q.   With that caveat, is this table in first normal

15 form?

16   A.   This is the first time I'm seeing this table,

17 but with the caveat that the column order and row order

18 are immaterial, if this were a database table, it is

19 consistent with a table that would be in first normal

20 form.

21   Q.   Have you heard the term primary key?

22   A.   Yes, I have.

23   Q.   And in the context of the patent and relational

24 databases, what's a primary key?

25   A.   In the context of the patent and the

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1   specifications and the history, and databases in

2   general, the primary key of a table is A -- I'm sorry,

3   is one, or more than one columns, of the table that

4   guarantees uniqueness of each of the rows of the table.

5   MR. GOETTLE: Mark that one 7.

6   (Exhibit 7 marked for identification.)

7   Q.   (By Mr. Goettle) The court reporter is handing

8   you what's been marked Exhibit 7.   I'll submit to you,

9   and you can check this if you would like, but I'll

10   submit to you this is the same table as shown in Exhibit

11   6 except there's a primary key designation.   Do you see

12   that?

13   A.   Yes, I do.

14   Q.   And at least what's intended to get conveyed by

15   that primary key designation is that the column's first

16   name and last name combined are a primary key for this

17   employee table.

18   A.   Okay.

19   Q.   Does that make sense to you, at least how I've

20   explained what's meant by the designation?

21   A.   Yes, I understand the box.

22   Q.   Okay.   So is this designation of the primary

23   key as being the first name and last name columns of the

24   employee table, is that a proper primary key

25   designation?

1   A.   I don't know what you mean by is it a "proper

2 designation." Someone other than me designated it, so

3 it seems like it's been so designated.

4   Q.   Can the first name and last name on the

5 employee table be a primary key for this table?

6   A.   On this table, the first name and last name

7 combined can be the primary key. And just off the top

8 of my head, it looks like the first name alone would

9 have been sufficient, the last name alone could have

10 been sufficient, and any combination of the first name

11 column with any of the other columns or any combination

12 of the last name column with any of the other columns,

13 would also be a appropriate primary key.

14   Q.   So a primary key can either be confined to one

15 column or it can be a combination of multiple columns?

16   A.   When talking about databases, that is a correct

17 statement that the primary key can be one column or

18 multiple columns.

19   Q.   Is there something else where that's not a

20 proper -- where my sentence is not correct? I mean, you

21 qualified your answer by saying, "talking about

22 databases." Is there something else that primary keys

23 are used to designate besides database tables?

24   A.   In the context of these patents we're talking

25 about, the -- I think the 402 specifically, it talks

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1   Q.   Can a single column of a table be designated as

2   a primary key for the table if it has a null value in a

3   field of the column?

4   A.   I think the answer to that question is

5   dependent on the relational database management system.

6   Q.   And since I asked that in the context of a

7   table inside a database, is your answer the same if the

8   table is a logical table within the meaning of the

9   patent?

10   A.   I don't know that I've seen any discussion in

11   the specification that precludes a primary key column of

12   a logical table from having a null value. I also don't

13   know that I've seen explicit discussion that allows

14   it. I'd have to spend a little bit of time studying the

15   SQL queries that are listed in Columns 11 -- sorry, 10

16   through 15 to come up with a more precise answer.

17   Q.   The court reporter is going to hand you what is

18   going be marked Exhibit 8.

19   (Exhibit 8 marked for identification.)

20   A.   Can I get on minute? There's something in my

21   eye that I think I --

22   Q.   Do you need to take a break?

23   A.   No, I don't want to take a break.

24   MS. FREEMAN: I'd rather you go to the

25   bathroom or whatever you need to just make sure you're

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1   comfortable enough to --

2   THE WITNESS: I think I'm okay. I think

3   it was just an eyelash. Sorry.

4   MR. GOETTLE: Yeah, if you need a break,

5   obviously.

6   THE WITNESS: Sure.

7   Q.   (By Mr. Goettle) Do you have Exhibit 8 in front

8   of you?

9   A.   I do.

10   Q.   So I'll represent to you and you can, again,

11   check me. Exhibit 8 is the same table as Exhibit 7,

12   except that there's what I intend to be a null value in

13   the floor column. And so my question is -- and again,

14   we have a primary key designation encompassing the two

15   columns, the first name column and the last name

16   column. Do you see that?

17   A.   Yes.

18   Q.   Okay. So my question is: Is this an

19   appropriate primary key designation? In other words,

20   can you have a primary key designation on columns of a

21   table that has a null value within it?

22   A.   Yeah, this Exhibit 8, employee table that we're

23   looking at, I think you've said this is a physical table

24   in the database?

25   Q.   Yes.

1   A.   And this is a physical table in the database,

2   it would be allowed to have a primary key on the first

3   name and last name column, even though the floor column

4   has a null value.

5   Q.   Okay. So now looking at Exhibit 8, and now,

6   let's assume this is a logical table within the meaning

7   of the '402 patent.

8   A.   Okay.

9   Q.   So I have the same question: Is this a proper

10   primary key designation?

11   A.   If you will give me a second.

12   Q.   Sure.

13   A.   The '402 patent in Claim 1, for example, says

14   that you need to designate one column of the logical

15   table as a logical primary key column. You've

16   highlighted a primary key here with more than one

17   column --

18   Q.   I see, yeah.

19   A.   -- so I think, at least for Claim 1, it would

20   not qualify.

21   Q.   Fair point, okay. Right, that's a good point.

22   Yeah, so that -- let me make sure I understand what

23   you're saying. The claim recites designating one column

24   as a primary key column and Figure 8 has -- or Exhibit 8

25   has two columns designated as the primary key for the

1   table. So in that sense, it can't be the logical table

2   of Claim 1?

3   A.   Correct, this cannot be the logical table of

4   Claim 1.

5   Q.   I don't have another chart to show you because

6   I didn't think of that. But let's -- let's just for

7   sake of a hypothetical use, figure -- Exhibit 8 is a

8   starting point. But let's say that instead of having

9   first name and last name designated as the primary key

10   column -- as the primary key, let's just assume that

11   it's just the first name that has a designation of a

12   primary key, okay?

13   A.   So I want to make sure I understand.

14   Q.   Sure.

15   A.   You're saying I have an employee table like in

16   Exhibit 8 but the only primary key column designated is

17   the first name column?

18   Q.   Right.

19   A.   Okay. And you're saying this is now a logical

20   table and not a physical table?

21   Q.   Correct.

22   A.   Okay.

23   Q.   So the question is: With just the first name

24   designated as the primary key, is that a proper

25   designation, within a logical table, within the meaning

1   process of combining two tables as denormalization. But

2   there's an oddity in the example given on Figure 6 that

3   the fact that the Table AP is normalized is purely a

4   function of the data in the tables.

5   For example, if the last row of Table P

6   wasn't there, then the resulting table would be

7   normalized. If any of the FK Column of Table A -- I

8   take that back. If either of the P1s in the FK Column

9   of Table A had a P3 in them, then the resulting table

10   would also not be denormalized, it would be normalized.

11   And so I don't know if this is a denormalization process

12   of the tables or if this is a denormalization process

13   because the tables combined to produce a denormalized

14   result.

15   Q.   Okay. First, I just want to step back because

16   I'm not sure -- I just want to make sure you agree that

17   Table AP, as it's shown here in Figure 6, is a

18   denormalized table?

19   A.   Yes, I think we agreed to that.

20   Q.   And that's because the last row has -- is --

21   has null values across in every column?

22   A.   Yeah, that last row is also an oddity to me. I

23   read that as a -- I don't see why that last row would

24   come out of this combination.

25   Q.   Okay.

1   A.   So I focused more on the nulls in the fourth

2   row of Columns 4 and Column 5. Or -- yeah, the fourth

3   row.

4   Q.   Okay, I see. Oh, I see. Okay, so ignoring --

5   okay --

6   A.   That last one never made -- it just seems like

7   a graphical. There's no row that comes from Table A or

8   P for that last row.

9   Q.   Okay, I see. So if Table AP -- Table AP, in

10   your opinion, would be denormalized even without the

11   last row?

12   A.   Correct.

13   Q.   Because it has null values on the fourth row in

14   Column 4 and 5?

15   A.   Yes, that is correct. And I'm saying that's a

16   function of the data in Tables P and A --

17   Q.   Okay.

18   A.   -- not a function of the denormalization

19   process, as you asked me.

20   Q.   Okay. But now I want to know -- if you can

21   keep Figure 6 in front of you and now refer to the

22   sentence that we were looking at in your declaration at

23   paragraph 27, okay?

24   A.   Yes.

25   Q.   And now referring to "a table" in the middle of

1   the sentence so we're clear on which table I'm referring

2   to?

3   A.   Yes.

4   Q.   Okay. Can Table AP be an example of "a table"

5   in that sentence in Paragraph 27?

6   A.   I'd have to reinvestigate the patent with that

7   particular question in mind, but looking at those words,

8   I believe, yes, Table AP could be a logical table.

9   Q.   So a logical table could be the result of a

10   denormalization process?

11   A.   Yes, I believe the patent is clear that a

12   logical table can be created from any of the captured

13   tables, and the captured tables can have normalized

14   tables and they can have denormalized tables.

15   Q.   And so that would mean that the -- if the

16   logical table is created from a captured table that's

17   denormalized, that would mean a logical table is also

18   denormalized? I don't mean to make this more confusing.

19   I just --

20   A.   No. I understand your question and I don't

21   agree. I think if a logical table is created based on a

22   captured denormalized table, that logical table still

23   could be normalized.

24   Q.   I see. Could be normalized but wouldn't

25   necessarily be normalized?

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1   logical tables of Claim 1 have to have a primary key

2   column, a logical primary key column, and so there could

3   be no logical table claim in Claim 1 that does not have

4   a logical primary key column. I need to go through each

5   of the --

6   Q.   So logical table, as it's used in other claims,

7   could mean something different?

8   A.   I would need to go through each of the claims

9   to say that. That's an answer I could give you, I just

10   need to read them all again.

11   Q.   So does that mean that you're not sure if the

12   sentence that you've written in Paragraph 27, that we've

13   been talking about, you're not sure if that's correct?

14   A.   Well, I'm sure that's correct --

15   Q.   Right.

16   A.   -- but my Paragraph 27 is scoped to Claim 1.

17   If you read the end of Paragraph 26, I'm talking about

18   independent Claim 1.

19   Q.   Okay. So logical table, within the meaning of

20   this patent, could mean different things depending on

21   whether -- what claim it's being used in?

22   A.   Well, I think that my statement in 27 is

23   correct: The logical table is always, independent of

24   claim, going to be a representation of a table that

25   comprises a subset of columns from one or more physical

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1 tables.

2   You were asking me earlier about the

3 primary key column. And I know for sure that Claim 1

4 requires logical tables to have a primary key column.

5 But I believe, and just skimming now, looking at Claim 8

6 of the re-issue from the re-exam, I don't see a mention

7 of a primary key column. And so I just, in order to

8 answer your question precisely, would need to study the

9 claims again with that question in mind.

10   Q.   Okay. And so that would mean if -- wait, let

11 me step back.

12   Have you ever heard of the term logical

13 table outside the context of the '402 patent?

14   A.   You know, I can't say one way or the other if

15 I've heard that term before, but the prosecution history

16 and the patentee talk about it quite a bit, so I don't

17 think I've ever heard the term as described by patentee

18 outside the context.

19   Q.   Okay. So logical table has a meaning specific

20 to the '402 patent?

21   A.   Yes, I would say that's a correct statement.

22   THE WITNESS: I don't know what a good

23 time to break for lunch might be but I'm getting a

24 little bit hungry.

25   MR. GOETTLE: Okay. We can break right

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1   now.

2   THE WITNESS: So whenever is good. I can

3   go another 5, 7, 10 minutes, if that's helpful.

4   MR. GOETTLE: Do you want to keep going?

5   MS. FREEMAN: Whenever my witness wants to

6   take a break, that's a good time.

7   THE WITNESS: Well, if it's a good place?

8   MR. GOETTLE: This is a great place.

9   THE VIDEOGRAPHER: Okay. This marks the

10 end of videotape Number 3. We're going to go off the

11 record. The time is 12:31.

12   (Lunch recess.)

13   THE VIDEOGRAPHER: Good afternoon. This

14 marks the beginning of videotape number 4 in the

15 deposition of Neeraj Gupta on June 18, 2012. We're

16 going back on the record. The time is 1:39.

17   Q.   (By Mr. Goettle) Good afternoon, Mr. Gupta.

18   A.   Good afternoon.

19   Q.   Have you heard the word "schema" in the context

20 of the patents and relational databases in general?

21   A.   Yes, I have.

22   Q.   What is schema?

23   A.   Schema generally refers to the organizational

24 structure within a database.

25   Q.   And is that how a skilled artisan would

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1   that would seem odd, wouldn't it?

2   MS. FREEMAN: Objection, vague, ambiguous.

3   A.   It would be odd to me to be asked to look in

4   the four corners of a patent prosecution specification

5   and claims to define a term that was never used by the

6   inventor in the patent prosecution, specification, or

7   claims.

8   Q.   (By Mr. Goettle) I'm sorry. I'm just -- I'm

9   trying to wrap up, and I want to make sure I've

10 covered --

11   A.   I apologize. This is your time.

12   Q.   Can a relational schema object, whether

13 normalized, denormalized, or neither, within the '402

14 patent, can it be created without creating a logical

15 table?

16   MS. FREEMAN: Objection, vague, ambiguous,

17 assumes facts not in evidence.

18   A.   Yes. The patent has many examples of that.

19   Q.   (By Mr. Goettle) So the patent discloses a

20 normalized relational schema object being created

21 without ever defining a logical table?

22   A.   I don't think that was your previous question.

23 I think your previous question was related to a

24 relational schema object, and now you're asking about a

25 normalized --

1   Q.   Okay.

2   A.   -- relational schema object. Just wanted to

3   make sure I was --

4   Q.   No, you're right.

5   A.   If your previous question was normalized --

6   Q.   It's different.

7   A.   Well, no. I want to make sure I answered the

8   first one properly.

9   Q.   Okay. So let me try it this way. The patent

10   describes creating relational schema objects without

11   defining logical tables?

12   A.   That's correct.

13   Q.   Does the -- does the patent disclose creating

14   normalized relational schema objects without defining

15   logical tables?

16   A.   I haven't considered that question before. I

17   do know the patent does disclose creating normalized

18   relational schema objects that do define logical

19   tables. I hadn't undertaken an analysis to determine

20   whether or not there can be a normalized relational

21   schema object and not a logical table that comes from

22   it.

23   Q.   You don't know one way or another?

24   A.   That's correct. I know that it does disclose

25   creating logical tables from normalized relational

1   schema objects. I don't know if it discloses not

2   creating logical tables from those.

3   Q.   Can you look at Exhibit 1, which is your expert

4   declaration, at Paragraph 29.

5   A.   Okay. I'm on the right page.

6   Q.   Okay. Towards the middle of Paragraph 29,

7   there's a sentence that starts, "Accordingly." Do you

8   see that?

9   A.   Yes.

10   Q.   It says, "Accordingly, the NRSO is a construct

11   that represents a logical table with a logical primary

12   key column."

13   MS. FREEMAN: Is that a question?

14   Q.   (By Mr. Goettle) Do you see that?

15   A.   Yes.

16   Q.   And the next sentence says, "The NRSO may

17   represent a logical table for physical database tables

18   that are normalized or denormalized." Do you see that?

19   A.   Yes, sir.

20   Q.   Okay. Does that change your opinion at all of

21   whether you've considered whether a NRSO or a normalized

22   relational schema object can be created without defining

23   a logical table?

24   A.   No, it doesn't change my thinking on that.

25   Again, it's not -- I hadn't undertaken any investigation